

Identity and Intimacy: An Initial Investigation of Three Theoretical Models Using Cross-Lag Panel Correlations

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This investigation specified three models regarding the association between identity and intimacy formation and investigated their potential validity using a longitudinal cross-lag panel design. Seventy-one males and 71 females completed identity and intimacy measures on two occasions over a 5-week period. The primary findings are (1) individuals with a clear sense of identity are more likely, 5 weeks later, to have a more advanced sense of intimacy for both sexes when sex-role identification is removed from gender comparisons; (2) sex-role orientation mediates the identity/intimacy association, while for females, a masculine orientation is associated with a pattern similar to that observed for either masculine- or feminine-oriented males; and (3) femininity is associated with a more fused connection between identity and intimacy for females. This report provides an initial investigation studying the identity/intimacy association during late adolescence based on three theoretical perspectives. Theoretical interpretations and conclusions are offered.

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INTRODUCTION

Erikson's (1959) theory of psychosocial development has become a major framework for understanding adolescent development. During adolescence, one is confronted with the resolution of the crises of identity achievement versus identity diffusion followed in young adulthood by intimacy versus isolation. Identity includes our own interpretation of early identifications and subsequent relationships with significant others. It includes commitment to a personal ideology which integrates self-definition, sex-role identification, accepted group standards, and the meaning of life. "Ego identity is a complex role image that summarizes one's past, gives meaning to one's present, and directs behavior in the future" (Adams and Gullotta, 1983, p. 184). Further, Erikson defined intimacy as "a fusing of identities" (1968, p. 135). It is the "capacity to commit [oneself] to concrete affiliations and partnerships and to develop the ethical strength to abide by such commitments" (Erikson, 1968, p. 263). In discussing the association between identity and intimacy, Erikson utilized an epigenetic principle and states that in life-span development, identity *must* precede intimacy—while in turn intimacy resolutions influence identity. He argued that an individual without a firm sense of self will be unable to commit to another person. Thus, fulfillment of intimacy requires a sense of shared identities.

Eriksonian theory has been criticized as being primarily a theory of male development (Gilligan, 1982). Although sex differences are acknowledged by Erikson, in that girls emphasize inner space and that their identity development appears to be fused with intimacy formation, these gender differences are apparently not significant enough for Erikson to alter the eight-stage developmental progression to recognize gender differences.

However, others (Douvan and Adelson, 1966; Gilligan, 1982; Josselson, 1987) have addressed the disparity between women's experience and the Eriksonian model. Additional studies have addressed the emerging pattern that for males, issues related to ideological identity development, and for females, issues related to establishing and maintaining interpersonal relationships, appear to be the most salient factors that contribute to advanced intimacy formation among adolescents (Craig-Bray *et al.*, 1988; Fitch and Adams, 1983; Josselson, 1987). These findings have led some researchers to speculate that for adolescent girls, intimacy development may occur concurrent with, or even precede, identity development. Josselson (1987) also pointed out that perhaps our theories of development have emphasized separation and autonomy instead of connection and relationships. She suggests that "a central aspect of identity is the commitment to a self-in-relation rather than to a self that stands alone facing an abstract world" (1987, p. 22). Hence, conceptualized this way, women's life stages may be different from men's.

Unfortunately, these gender distinctions remain somewhat ambiguously stated and theoretical models have not been explicated or tested regarding proposed gender differences. Further, for those few studies completed, most have used concurrent rather than time-ordered methodologies. Indeed, no published study relating identity and intimacy has involved collecting *both* variables lagged over time, a necessary procedure in analyzing the possible predictive relationship of these constructs. Thus, the purposes of this study were (1) to more concretely delineate testable theoretical models; (2) to assess the identity and intimacy association at two points in time, using a sample of adolescents to determine the relationship between these developmental processes; and (3) to investigate gender and sex-role orientation differences in this relationship.

ASSOCIATION BETWEEN IDENTITY AND INTIMACY

The bulk of the research investigating intimacy has addressed the relationship between identity and intimacy as contiguous constructs. However, in Erikson's stage theory, identity formation is thought to influence a sense of intimacy and *in turn*, reciprocally, intimacy is thought to influence identity. The results of several studies have provided tentative and indirect support for Erikson's developmental progression by revealing that persons with more advanced identities are also likely to be more advanced in their intimacy (Kacerguis and Adams, 1980; Marcia, 1976; Orlofsky *et al.*, 1973; Tesch and Whitbourne, 1982). Although this association has been found, the relationship between identity and intimacy has been reportedly modest. Also, it should be noted that mostly concurrent correlational relationships have been studied, and without time-ordered variables predictive associations remain untested. (One exception is a study by Fitch and Adams, 1983, where identity was assessed one year and intimacy the next.)

Although these studies have suggested that similar patterns exist for male and female regarding the association between identity and intimacy development, other studies have revealed gender-divergent developmental paths. For example, Schiedel and Marcia (1985) reported an equal number of males and females in more advanced identities, combined with a significantly greater number of females with high-intimacy capacities, lending support to the proposition that identity and intimacy issues may be merged for women. They also investigated the relationship between sex-role orientation and identity and intimacy formation. Subjects high in identity were higher in masculinity, although females who tended to be higher in intimacy than men, also had significantly higher femininity scores. Also, Hodgson and Fischer (1979) have found that males focus on *intrapersonal* aspects of identity whereas fe-

males focus on *interpersonal* components. Hodgson and Fischer suggest males tend to resolve the dimension of occupational and political/religious ideology earlier, but do not appear to resolve the sexual ideology dimension sooner than females. Women, however, appear to have greater capacities than men for experiencing high levels of intimacy. Further, this female attribute does not appear to be dependent on identity formation. Hodgson and Fischer speculated that "a certain level of identity development must precede a readiness for intimacy among males, whereas such 'readiness' in females either precedes or coexists with the first groupings toward identity" (Hodgson and Fischer, 1979, p. 47). They concluded that Erikson's stage development is supported for males. However, female identity development is thought not necessarily to be delayed, as suggested by Erikson, but follows a different sequence. Also, the issues of intimacy and identity formation are interrelated in a more complex manner than suggested by Erikson. Furthermore, longitudinal data summarized by Josselson (1987) suggested complex associations between identity and intimacy may continue to unfold into adulthood.

To summarize, prior research investigating the association between identity formation and intimacy has provided initial insights on adolescent and early adult development. However, theoretical models reflecting possible gender distinctions have not been adequately explicated nor tested. Therefore, an initial study has been completed to assess the possible utility of three competing theoretical frameworks for understanding gender differences in the identity/intimacy association.

MODELS

Three hypothesized models are delineated in Fig. 1. Each model is based on recent theoretical suppositions regarding the association between identity and intimacy.

Model 1: Eriksonian

Erikson views the resolution of a sense of identity versus role confusion as the critical task of adolescence. Further, he proposes this resolution must be accomplished prior to intimacy formation. An individual without a firm sense of self will be unable to commit to another. Erikson makes an exception for females, however, stating that "much of a young woman's identity is already defined in her kind of attractiveness and in the selective nature of her search for the man (or men) by whom she wishes to be sought" (1968, p. 283). Hence, a woman's identity development is incomplete until

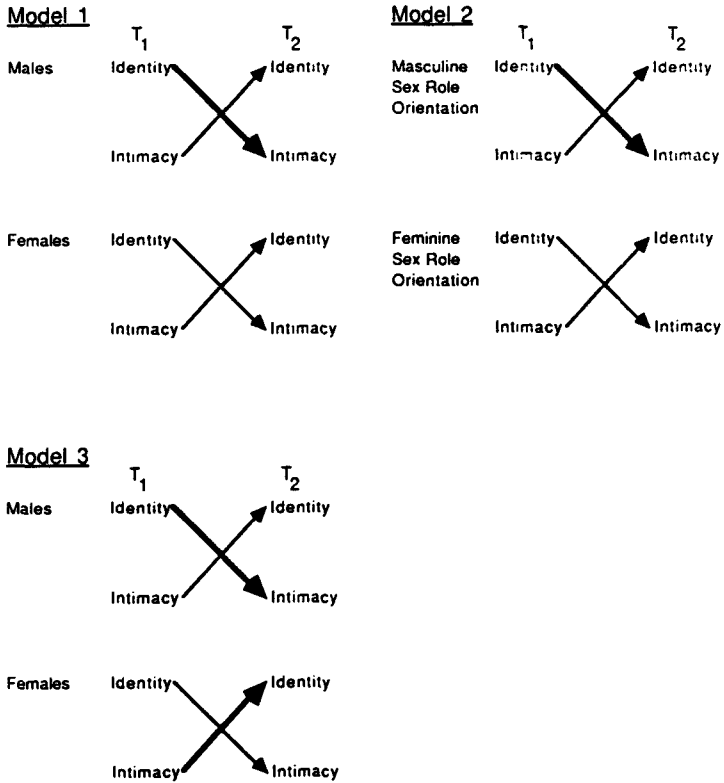


Fig. 1. Conceptual models.

she has attached herself to a man at which time she is then able to achieve a fulfilled intimacy.

Model 1 suggests that for males, identity precedes intimacy (bold arrow). However, for females, identity and intimacy appear to be fused together in a form of symbiotic connection that is less differentiated than that proposed for males.

Model 2: Gilligan's Different Voices

Gilligan (1982) noted a contrasting pattern of male and female development characterized by theme, not gender. These themes may be identified by sex-role orientations, indicative of the differences in masculine and femi-

nine personality development. The male "voice" defines identity more in a context of individual achievement and goals (instrumental role) with focus on the role of separation. Based on a process of individuation, these persons should build an identity as a precursor to intimacy. On the other hand, the female "voice" defines identity in a context of relationships that are judged by a standard of care and responsibility (expressive role) with focus on the ongoing process of attachment. Basing their sense of self on intimacy and caring, identity and intimacy are thought to be fused.

Model 3: Agonic Versus Hedonic Power

Theoretical suppositions from social psychology suggest that the developmental progression for females may in fact be reversed from that of males. This theoretical perspective is suggested by two lines of reasoning. One contrasts an agonic and hedonic power mode exhibited by men and women, respectively. Freedman, in her book *Beauty Bound* (1986), stated that men tend to rely on the more aggressive form of power in the agonic mode of social behavior through the use of economic or physical force, whereas women's hedonic power to command attention is derived from the indirect or covert use of display, charm, or love withdrawal. Although male identity development is supported by assertiveness, a female is encouraged to invest her time and energy in the pursuit of attractiveness for social interaction (intimacy development).

A second line of reasoning suggests women have the ability to develop a sense of caring or empathy at a younger age than men. Chodorow (1974) pointed to the sex differences in early experiences of individuation and relationships with female caretakers as providing this propensity to develop intimate relationships. A review by Fischer (1981) supported the notion that adolescent females are more capable than males of developing and maintaining intimate relationships and that females develop skills in relating to others earlier than males. Perhaps these behaviors are indicative of the earlier development of intimacy in adolescent girls.

This model suggests that for males, identity precedes intimacy. In contrast, for females, intimacy development is thought to precede identity formation.

The present investigation was therefore undertaken to assess whether gender differences can be observed, based on the three theoretical models, in the correlational association between identity and intimacy. Late adolescence was selected for this study in that this period has been shown to be a central period of identity formation (see Waterman, 1982) with issues of intimacy emerging as a major psychosocial interest (e.g., Craig-Bray *et al.*, 1988).

METHODS

Sample

The sample was composed of 142 college students (71 male and 71 female) selected from a larger sample of 300 students who were recruited from general survey courses across disciplines at a Rocky Mountain university. Subjects were selected based upon marital status (never married) and age (17 to 26 years; $M = 19.4$). Prior research and theorizing has demonstrated that late adolescence and young adulthood are central life-cycle periods for the association between identity formation and intimacy resolution (e.g., Erikson, 1968; Adams and Gullotta, 1983; Craig-Bray *et al.*, 1988; Waterman, 1982) and thus were selected as an appropriate initial period for assessment in this investigation. Clearly, Erikson (1968) specified adolescence as the major period of identity consolidation, with intimacy resolution emerging during late adolescence and early adulthood. In particular, given identity formation is beginning to consolidate at this time, one would expect relative stabilization over reasonable time spans, making a time-lagged analysis appropriate. Longitudinal studies by Adams and Fitch (1982, 1983) support the assumption that stabilization does begin to occur in the early college-age years. The percentage of freshmen in the sample was 61%, of sophomores was 18%, of juniors was 15%, and of seniors was 6%.

Measures

Identity and Intimacy

The Erikson Psychosocial Stage Inventory Scale (EPSI; Rosenthal *et al.*, 1981) consists of six subscales based on Erikson's first six stages of psychosocial development. Each subscale consists of 12 items, 6 reflecting successful and 6 reflecting unsuccessful resolution of the "crisis" of the stage, for a total of 60 items. Respondents are asked to select an appropriate response for each item based on a Likert scale ranging from *almost always true* (5) to *hardly ever true* (1). Only the items from the identity and intimacy subscales were utilized in the present investigation since they tap feelings, cognitions, and behaviors associated with the constructs of identity and intimacy. Sample items include: I know what kind of person I am; I feel mixed up; I care deeply for others; I think it's crazy to get too involved with people. In a validation study of the EPSI utilizing a sample of 17- to 20-year-old late adolescents (Gray *et al.*, 1986), factor analysis of the data suggests construct validity for identity and aspects of intimacy in the form of friend-

ship and dating relationships. Also, Dyk (1987) has examined the convergent validity of the EPSI and the Inventory of Psychosocial Development (Constantinople, 1969) subscales measuring identity and intimacy in a sample of late adolescents. She found concurrent validity coefficients between the identity subscales of $r = .70$ and between the intimacy subscales of $r = .62$. Rosenthal *et al.* (1981) provided a thorough report of reliability and validity data for the EPSI using two samples of adolescents from nine Melbourne high schools. In the present study, internal consistency at Time 1 and Time 2 for the identity ($\alpha = .84$ and $.85$, respectively) and intimacy scales ($\alpha = .70$ and $.72$, respectively) were similar to those reported by the authors.

Sex Role

Two measures were used to assess a subject's sex-role orientation: The Bem Sex Role Inventory (BSRI; Bem, 1974) and the Questionnaire Measure of Emotional Empathy (Mehrabian and Epstein, 1972). Given empathy has previously shown to correlate positively with femininity and negatively with masculinity, and that empathy in the form of caring is thought to be a component of the connected or relationship theme proposed by Gilligan, the Mehrabian and Epstein measure was selected as a second instrument to assess for possible measurement specific findings and to add concurrent validity to findings from the BSRI.

The BSRI treats masculinity and femininity as two independent dimensions. A subject rates on a 7-point Likert scale each of the 60 masculine, feminine, and neutral characteristics as self-descriptors. For this study, a masculinity and femininity score was calculated for each subject. These scores indicate the extent to which a person endorses masculine and feminine personality characteristics as self-descriptive. Subjects were classified as low or high on each scale based upon normative medians that were nearly identical to the medians of this sample (nonsignificant differences). Reliability estimates were assessed in this study with the following alpha coefficients at Time 1 and Time 2: for females, $.75$ and $.77$ for the femininity scale and $.88$ and $.88$ for the masculinity scale; for males, $.76$ and $.76$ for femininity and $.89$ and $.91$ for masculinity. These coefficients are comparable to those reported by Bem (1974).

The Questionnaire Measure of Emotional Empathy (QMEE), a 33-item Likert scale, was developed by Mehrabian and Epstein (1972) to measure emotional empathy and consists of five theoretical components which assess self-reported susceptibility to emotional contagion, appreciation of the feelings of unfamiliar and distant others, extreme emotional responsiveness, sympathetic tendencies, and willingness to be in contact with others who have

problems. Again, subjects were classified as low or high on empathy based upon normative medians. Internal consistency in our sample was estimated using Cronbach's alpha ($r = .80$). Further, correlations between empathy and femininity (Time 1, $r = .50$, Time 2, $r = .52$) scores revealed that the empathy measure (QMEE) and the feminine subscale of the BSRI were positively correlated. Also, the masculine subscale of the BSRI showed virtually no correlation to the feminine subscale (Time 1, $r = -.03$, Time 2, $r = .08$) and the empathy scale (Time 1, $r = -.03$, Time 2, $r = -.07$), both designed to measure expressive traits.

Procedures

Subjects were recruited from freshman level general educational courses and completed a questionnaire booklet that included all instruments. These subjects responded to an identical instrument 5 weeks later, providing data for each individual at two points in time. In this initial study a 5-week period was selected to assure reasonable stability in identity and intimacy responses. It is recognized that other time-lag periods may be more representative and should be considered in further extension of this line of research.

A Fortran computer program developed by Kenny (1976), entitled PANAL, designed specifically to perform cross-lag statistical analyses, was utilized in the computation of cross-lag correlations for the two-wave, three-variable panel design.

Cross-Lag Analysis

Cross-lag panel correlation is a quasi-experimental design (Campbell and Stanley, 1963) that can be used to study the relationships between variables that are difficult or incapable of being manipulated by the experimenter. It is a test for spuriousness, or a means of ruling out the influence of other variables. By meeting the assumptions of synchronicity (the two constructs are measured at the same point in time) and stationarity (the structural equation for a variable is not different at the two points of measurement), the pattern of *associations* between variables may be examined and *directionality inferred*. (See Caslyn, 1976, and Kenny, 1975, for a detailed explanation of cross-lagged analysis.)

Kenny and Harackiewicz (1979) stated that the pivotal assumption in cross-lag analysis is that of stationarity. Even though the constructs are measured by the same instruments at both points in time, to minimize measurement error a rule of thumb is to have a short time lag between waves. Implicit in *perfect stationarity* is the assumption that the synchronous correlations

between panel variables do not change over time. However, in this analysis a second model of stationarity called *quasi-stationarity* (Kenny, 1975) was implemented. Quasi-stationarity assumes that synchronous correlations would not change over time if they were corrected for attenuation due to measurement error. Only those synchronous correlations that meet the minimal standard (.30) for quasi-stationarity are presented and discussed in these analyses. Using Kenny's (1976) PANAL computer program, communality ratios were computed from the panel variables' reliability ratios. By comparing the statistics of the two stationarity models, the synchronous correlations corrected for changes in the reliability of each variable are stationary. Hence, cross-lags corrected for attenuation due to presumed measurement error were compared in this analysis.

The cross-lagged panel correlation is particularly suited for the study at hand since the focus of this analysis is initial model testing. Given the assumptions of synchronicity and stationarity, this analysis tests a model of spurious effects that implies equal cross-lagged correlations. This study of the association of identity and intimacy is primarily looking at the two constructs as determinants. In all three models, a significant difference in the cross-lagged correlations will reveal a correlational dominance. This dominance is "only" suggestive of directionality. For example, if the cross-lagged correlation of Identity at Time 1 to Intimacy at Time 2 is significantly greater than that of intimacy at Time 1 to Identity at Time 2, this would indicate a statistical dominance suggestive of directionality where identity precedes intimacy development.

To test the associations derived from the three theoretical models, the cross-lagged analysis was performed in two phases. First, for each gender a standard cross-lagged analysis provided the statistical data for testing the hypotheses generated from Models 1 and 3. Then the analysis was repeated with subjects categorized by sex-role orientation to test the associations in Model 2. Autocorrelations and synchronous correlations are reported for the above analyses to reflect the stability and reliability of the identity and intimacy variables. A test of the significance between cross-lag correlations based upon the Pearson-Filon test is reported for each cross-lag correlation matrix.

In all cross-lagged PANAL analyses, age is treated as a control variable. For simplicity and ease in examining the analyses presented here, a series of figures are utilized.

It is important to present a cautionary note regarding the use of cross-lagged analyses. Critical analyses of this technique (e.g., Rogosa, 1980; Wohlwill, 1973) suggest that cross-lagged analysis does not fulfill the requirements for assessing causality. Further, Appelbaum and McCall (1983) indicated that certain assumptions should be met in using this technique. First, they indi-

cated the causal relationships for the two variables of interest should not change over time. Second, the stability correlations should be approximately equal. And finally, all important variables for the model should be measured and included in the panel. Recognizing that no investigation or data set could meet all of these restrictive assumptions, and that Rogosa (1980) has presented a sharp criticism of the cross-lagged technique, we agree with Appelbaum and McCall (1983, p. 456) that the technique can be used with considerable caution when partial correlations are calculated within the panel as computed with PANAL. Further, our interest in using this technique is bolstered by evidence showing that results using cross-lagged analyses are similar to those using simultaneous equation models and the analysis of covariance structures (e.g., see Gilbert *et al.*, 1986) even when all assumptions are not fully met. Recognizing that Rogosa has indicated that not only significance but size of the correlations must be considered in determining differences, we applied rigorous standards of comparisons. Finally, we used this technique to establish evidence for the *promise* of a line of research comparing theoretical models to the association between identity and intimacy during adolescence.

RESULTS

Models 1 and 3

Models 1 and 3 focus on gender differences in identity and intimacy development. First, gender differences are accounted for by separate analyses for male and female. Second, additional analyses of gender differences are undertaken through controlling for sex-role orientation as measured by empathy, masculinity, and femininity.

In the first analyses (Fig. 2) addressing gender differences, a significant z test for cross-lagged correlations reveals, for males only, that identity predicts intimacy. For females, one might initially assume, given the absence of a significant difference in cross-lag correlations, that identity and intimacy are fused.

However, the cross-lags were recomputed with the intent of separating gender (as a basic genotypic factor) from the identification of a sex-role orientation by controlling for empathy, masculinity, and femininity, and a significant cross-lag difference emerged for both male and female. This analysis attempts to remove socialization factors from the basic biological differences associated with being male or female. As Fig. 3 indicates, a cross-lagged dominance emerged for both male and female, with identity predicting intimacy. Regarding Model 1 depicted in Fig. 1, these analyses suggest that

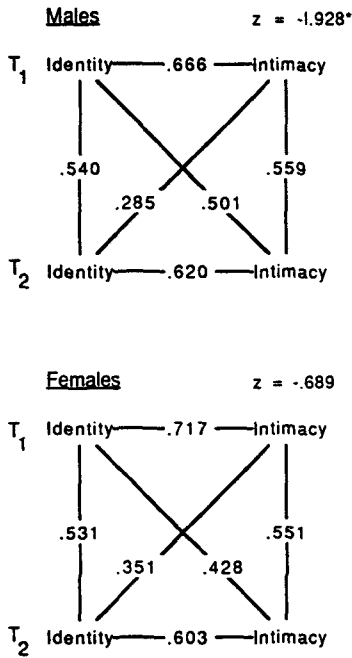


Fig. 2. Cross-lagged panel paradigm with EPSI measures by gender (* $p < .10$).

when gender is treated as a factor void of sex-role orientation interactions, identity predicts intimacy for male and female. No evidence of an intimacy-to-identity predictive association was observed either for the initial gender difference or for the gender controlling for sex-role orientation analyses. Thus, distinctions by gender alone may be insufficient to understand the identity and intimacy relationship.

Model 2

Given the importance of the initial findings that sex-role typing mediates gender, and that Gilligan and numerous social psychologists have argued that the association between identity and intimacy is based on socialization and internalized psychological processes of a “different voice,” analyses comparing low and high empathy, low and high masculinity, and low and high femininity have been included for both genders.

Figure 4 summarizes the analyses assessing Model 2 for male respondents. The left-hand column represents males scoring above the median on the masculine scale, and below the median on the femininity and empathy scales, thus reflecting what may be construed as a masculine sex-role orientation. The right-hand column represents males with a more feminine sex-

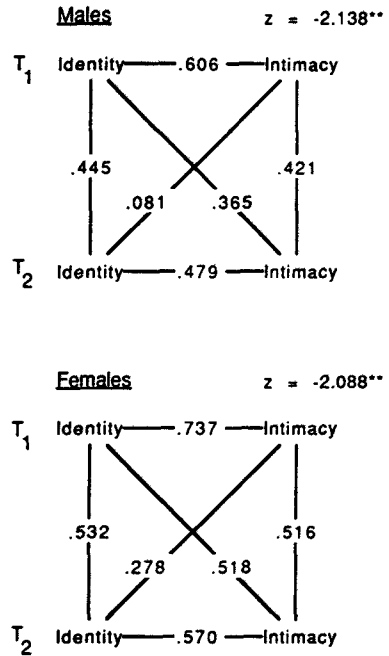


Fig. 3. Cross-lagged panel paradigm with EPSI measures by gender controlling for sex-role orientation (* $p < .10$; ** $p < .05$).

role orientation. In all cases, when a significant cross-lag difference was observed, identity predicted intimacy. Further, the identity to intimacy association was strongest for the more feminine-oriented males. No support was found for the lower half of Model 2 which proposed that fusion was predicted for feminine males.

Figure 5 summarizes the analyses assessing Model 2 for females. Once again the left-hand column represents females scoring above the median on the femininity and empathy scales and below the median on the masculinity scale, thus reflecting a feminine sex-role orientation. The right-hand column represents females with a more masculine sex-role orientation. For the feminine-oriented women in this sample, no statistical cross-lagged difference was observed—suggesting fusion between identity and intimacy. However, when masculine-oriented women were assessed, a cross-lagged difference was observed with identity predicting intimacy. These data support, for females, part of Gilligan’s argument of a different voice in that feminine-oriented females had fused identity/intimacy associations. However, for women who have internalized a more masculine sex-role typing, identity predicts intimacy.

The results from these analyses can be summarized as follows: (1) When examining gender differences, with sex-role identification removed from the assessment of identity and intimacy, identity appears to predict intimacy for both sexes; and (2) sex-role orientation does appear to mediate the identi-

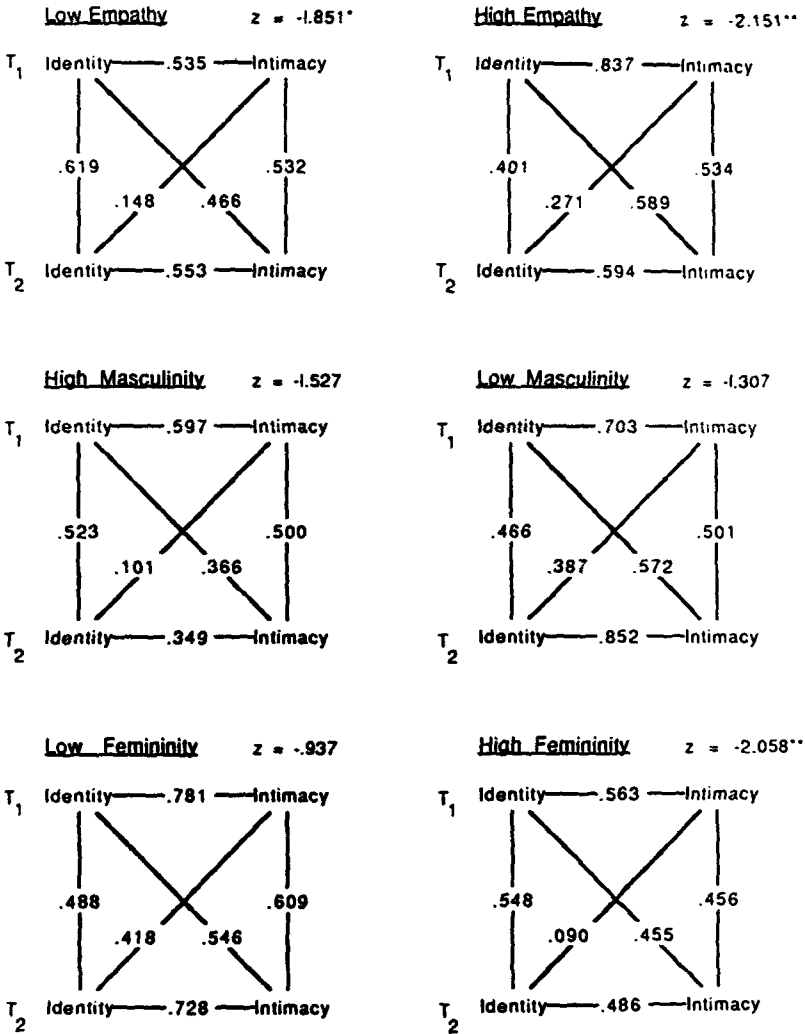


Fig. 4. Cross-lagged panel paradigm with EPSI measures by sex role orientation for males (**p* < .10; ***p* < .05).

ty/intimacy relationship, where for males, femininity enhances the identity/intimacy association but does not change the general male pattern of identity predicting intimacy; for females, a masculine sex-role orientation results in a pattern similar to either masculine or feminine males, while femininity is associated with a more fused connection between identity and intimacy.

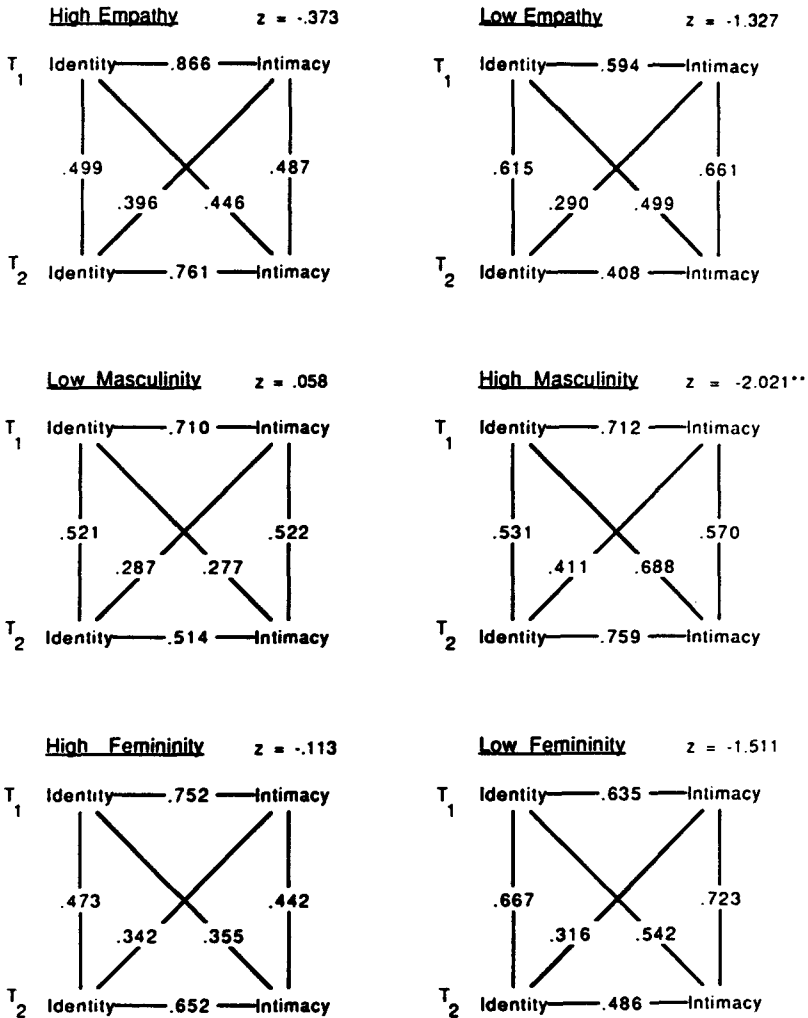


Fig. 5. Cross-lagged panel paradigm with EPSI measures by sex role orientation for females (** $p < .05$).

DISCUSSION

The major goal of this study was to investigate the relationship between identity and intimacy development over a 5-week time lag. The 5-week period was primarily selected to assure relative stabilization in measures over time and does not represent any particular theoretical selected time period.

Three theoretical models were formulated to explain the developmental sequence between the two constructs and to compare gender and sex-role orientation differences in identity and intimacy formation. It was hypothesized either that (1) males (Models 1 and 3) or males and females with a masculine sex-role orientation (Model 2) would follow an Eriksonian developmental progression with identity formation predicting intimacy development, or (2) that for females (Models 1 and 3) and for males and females with a feminine sex-role orientation (Model 2), identity and intimacy development would be fused (Models 1 and 2) or that intimacy would be a predictor of identity formation (Model 3). In this discussion, reference to prediction is based on the notion of statistical correlational dominance. Prediction is used in general terms and reflects our interpretation that a cause-and-effect relationship *may* be operating. However, our evidence is only strong enough for us to suggest possible predictive association.

Focusing on gender differences in identity and intimacy development, it appears from the initial analyses of the cross-lags that the Eriksonian theoretical model has been supported. The correlational differences observed for males indicates identity predicts intimacy development. Likewise, the finding for females of a fusion between identity and intimacy supports Erikson's notions that women's search for intimacy results in a merger of identity with intimacy. However, when the cross-lag analyses were repeated, controlling for sex-role orientation, a similar developmental pattern emerged for both male and female. The same correlational difference is observed with identity predicting intimacy. Thus, when gender is treated as a factor void of sex-role orientation interactions, the hypothesis of identity as predictor of intimacy is supported for males; however, identity/intimacy fusion is no longer supported for females.

It must be noted that there was no evidence of an intimacy to identity correlational association—either for the initial gender difference or for the gender controlling for sex-role orientation analyses. Thus, there are no data to support Model 3 for females.

A comparison of subjects based on sex-role orientation yields interesting results. A correlational association of identity to intimacy was found for males regardless of sex-role orientation and for females who score above the median on masculinity. However, for the feminine-oriented women (those high on empathy, low on masculinity, and high on femininity), no statistical cross-lag difference was observed. This suggests fusion between identity and intimacy development for these females.

These data in part support Gilligan's argument that contrasting patterns in male and female development are characterized by theme and not gender. Females with a feminine sex-role orientation exhibit a fused identity/intimacy association. However, the finding that females with a mascu-

line sex-role orientation develop similarly to males with either a masculine or feminine sex-role orientation raises questions about whether males can be included in the feminine voice. Perhaps there are two voices or patterns—a masculine voice comprising all males, regardless of sex-role orientation, and females who score high on a masculinity measure; and a feminine voice expressed by females with a feminine sex-role orientation. Or possibly as Schiedel and Marcia (1985) suggested, females may have a diphasic identity development pattern in which one group focuses on occupationally/ideologically oriented issues, achieving an initial identity before 20, while the other group pursues a homemaking track and “not forming a self-constructed identity until around age 28 to 32 after fulfilling the socially prescribed roles of wife and mother” (p. 158).

Our findings appear to support Matteson’s (1975) argument that an integration of masculine and feminine personality characteristics is essential for optimal identity resolution. This may explain in part the significant identity to intimacy association for males scoring above the median on femininity scales. In like manner, a female who takes on more instrumental characteristics beyond the traditional feminine sex role is in a better position to discover her unique identity and exhibits a developmental pattern whereby identity predicts intimacy development.

However enlightening, this explanation does not help us understand what makes feminine female development differ from male and masculine female development and how masculine females are like males. Recognizing Appelbaum and McCall’s (1983) suggestion that one should attempt to identify variables that are not assessed in a cross-lag model and suggest factors that may underlie observed associations, we sought out additional interpretations. A recent study conducted by Baucom *et al.* (1985) may offer a possible explanation. These researchers found that females with higher testosterone (naturally secreted male hormone also secreted by female ovaries and adrenal glands) concentrations perceive themselves as self-directed, action-oriented, resourceful individuals (instrumental). Women with lower testosterone concentrations described themselves more in terms of an expressive role—caring and traditionally socialized. Schindler (1979), in a study of personality and vocational choice among females, also found testosterone concentration was significantly positively correlated with a need for achievement. Findings such as these suggest that there may in fact be a biological reason beyond socialization for females with higher levels of testosterone and a more masculine orientation to develop in a manner similar to males. Perhaps biological factors need to be assessed in order to fully understand the relationship between identity and intimacy development. That is, women with higher testosterone levels may have a biological mechanism that parallels most men regardless of their sex-role orientation. And these wom-

en may function more like men in general because of a shared or similar biological mechanism.

From this investigation we can suggest several theoretical conclusions. First, there is tentative evidence to confirm some of Erikson's theoretical assumptions that identity predicts intimacy development. Females with high masculinity tendencies appear to reflect a developmental pattern similar to males. Feminine females appear to exhibit a more fused identity/intimacy development that may coincide with what Erikson describes as a period of moratorium for females waiting to establish their identity in the context of the men they marry.

Erikson, however, does not incorporate the effect of sex-role orientations into his developmental model. The results of this study suggest that sex-role orientation may be an important factor in our understanding of the relationship between identity and intimacy. Indeed, in our investigation the masculine-oriented females and the feminine-oriented males manifested the most significant identity to intimacy association. It is possible that cross-sex role orientations may enhance one's ability to resolve the identity crisis and move on to intimacy formation. Perhaps males, by identifying in themselves expressive qualities, are better able to explore the depths of intimacy. Similarly, females who describe themselves as more instrumental may be more able to be self-assertive which enhances their ability to commit to a relationship where identities become fused. Thus, incorporating sex-role orientation, Erikson's epigenetic model may more accurately describe the resolution of identity and intimacy crises.

Second, Gilligan, Chodorow, Josselson, and others may be correct in assuming more than one developmental pattern. However, clarification is needed as to what is meant by the "voices" being classified by theme and not gender. Quantitative data herein indicate the possibility of a different developmental pattern (fused) for feminine females. Are these women then the only ones with a different voice? The males who scored high on feminine descriptors do not appear to speak with this different voice. Indeed, there appears to be a cross-sex role orientation that should be investigated in future studies. Further, given biological factors correlate with sex-role orientation, as we continue to untangle the association between identity and intimacy we might profit by using a biopsychosocial framework in the design and implementation of our investigations.

REFERENCES

- Adams, G. R., and Fitch, S. A. (1982). Ego stage and identity status development: A cross-sequential analysis. *J. Pers. Soc. Psychol.* 42: 574-583.

- Adams, G. R., and Fitch, S. A. (1983). Psychological environments of university departments: Effects on college students' identity status and ego development. *J. Pers. Soc. Psychol.* 44: 1266-1275.
- Adams, G. R., and Gullotta, T. (1983). *Adolescent Life Experiences*, Brooks/Cole, Monterey, CA.
- Appelbaum, M. I., and McCall, R. B. (1983). Design and analysis in developmental psychology. In Kessen, W. (ed.), *Handbook of Child Psychology. Vol. 1: History, Theory and Methods*, Wiley, New York.
- Baucum, D. H., Besch, P. K., and Callahan, S. (1985). Relation between testosterone concentration, sex role identity, and personality among females. *J. Pers. Soc. Psychol.* 48: 1218-1226.
- Bem, S. L. (1974). The measurement of psychological androgyny. *J. Consult. Clin. Psychol.* 42: 155-162.
- Caslyn, R. J. (1976). Guidelines for using cross-lagged panel correlation. *Represent. Res. Soc. Psychol.* 7: 105-119.
- Campbell, D., and Stanley, J. D. (1963). *Experimental and Quasi-Experimental Designs for Research*, Rand McNally, Chicago.
- Chodorow, N. (1974). Family structure and feminine personality. In Rosaldo, M. Z., and Lamphere, L. (eds.), *Woman, Culture and Society*, Stanford University Press, Stanford, CA.
- Constantinople, A. (1969). An Eriksonian measure of personality development in college students. *Dev. Psychol.* 1: 357-372.
- Craig-Bray, L., Adams, G. R., and Dobson, W. R. (1988). Identity formation and social relations during late adolescence. *J. Youth Adoles.* 17: 173-187.
- Douvan, E., and Adelson, J. (1966). *The Adolescent Experience*, Wiley, New York.
- Dyk, P. A. H. (1987). Identity and intimacy: A correlational or causal connection? Unpublished master's thesis, Department of Family and Human Development, Utah State University, Logan, UT.
- Erikson, E. H. (1959). *Identity and the Life Cycle (Psychological Issues, No. 1)*, International Universities Press, New York.
- Erikson, E. H. (1968). *Identity: Youth and Crisis*, Norton, New York.
- Fischer, J. L. (1981). Transitions in relationship style from adolescence to young adulthood. *J. Youth Adoles.* 10: 11-24.
- Fitch, S. A., and Adams, G. R. (1983). Ego-identity and intimacy status: Replication and extension. *Dev. Psychol.* 19: 839-845.
- Freedman, B. (1986). *Beauty Bound*, D.C. Heath, Lexington, MA.
- Gilbert, M. A., Bauman, K. E., and Udry, J. R. (1986). A panel study of subjective expected utility for adolescent sexual behavior. *J. Appl. Soc. Psychol.* 16: 745-756.
- Gilligan, C. (1982). *In a Different Voice*, Harvard University Press, Cambridge, MA.
- Gray, M. M., Ispa, J. M., and Thornburg, K. R. (1986). Erikson psychosocial stage inventory: A factor analysis. *Educ. Psychol. Measur.* 46: 979-983.
- Hodgson, J. W., and Fischer, J. L. (1979). Sex differences in identity and intimacy development in college youth. *J. Youth Adoles.* 8: 37-50.
- Josselson, R. (1987). *Finding Herself: Pathways to Identity Development in Women*, Jossey-Bass, San Francisco.
- Kacerguis, M. A., and Adams, G. R. (1980). Erikson stage resolution: The relationship between identity and intimacy. *J. Youth Adoles.* 9: 117-126.
- Kenny, D. A. (1975). Cross-lagged panel correlation: A test for spuriousness. *Psychol. Bull.* 82: 887-903.
- Kenny, D. A. (1976). *PANAL: A Computer Program for Panel Data Analysis*, Department of Psychology, University of Connecticut, Storrs.
- Kenny, D. A., and Harackiewicz, J. M. (1979). Cross-lagged panel correlation: Practice and promise. *J. Appl. Psychol.* 64: 372-379.
- Marcia, J. (1976). Identity six years after: A follow-up study. *J. Youth Adoles.* 5: 145-160.
- Matteson, D. R. (1975). *Adolescence Today: Sex Roles and the Search for Identity*, Dorsey, Homewood, IL.
- Mehrabian, A., and Epstein, N. (1972). A measure of emotional empathy. *J. Pers.* 40: 525-543.

- Orlofsky, J., Marcia, J., and Lesser, I. (1973). Ego identity status and the intimacy vs. isolation crisis in young adulthood. *J. Pers. Soc. Psychol.* 27: 211-219.
- Rogosa, D. (1980). A critique of cross-lagged correlations. *Psychol. Bull.* 88: 245-258.
- Rosenthal, D. A., Gurney, R. M., and Moore, S. M. (1981). From trust to intimacy: A new inventory for examining Erikson's stages of psychosocial development. *J. Youth Adoles.* 10: 525-537.
- Schiedel, D. G., and Marcia, J. E. (1985). Ego identity, intimacy, sex role orientation, and gender. *Dev. Psychol.* 21: 149-160.
- Schindler, G. L. (1979). Testosterone concentration, personality patterns, and occupational choice in women. Unpublished doctoral dissertation, University of Houston.
- Tesch, S. A., and Whitbourne, S. K. (1982). Intimacy and identity status in young adults. *J. Pers. Soc. Psychol.* 43: 1041-1051.
- Waterman, A. S. (1982). Identity development from adolescence to adulthood: An extension of theory and a review of research. *Dev. Psychol.* 18: 341-358.
- Wohlwill, J. F. (1973). *The Study of Behavioral Development*, Academic Press, New York.